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Advantages of an Academic Training

FOR A MEDICAL CAREER.

[By W. W. Keen, M. D., LL. D., Professor of the Principles of Surgery
and of Clinical Surgery, Jefferson Medical College, Phila.]

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Advantages of an Academic Training

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The time is rapidly approaching when all over the country our colleges will send forth several thousand young men to begin their active work in life. The need for a wise decision as to what shall be each man's career needs no comment.

The Editor of the BROWN MAGAZINE has asked me to present to its readers some of the advantages which attend an academic training before entering upon a medical career. Before doing so, however, I must add a word of commendation of the excellent work of the Brown University Medical Association, which has done so much to foster the medical idea among the students of the University, and to suggest changes and improvements in the college curriculum which adapt it to the requirements of future students.

As a teacher of surgery for now just thirty years, I feel that I may speak with some confidence as to these advantages, and it is with no little pleasure that in my own case, I have always recognized the fact that whatever success may have attended either my writings, my practice, or my teaching has been due chiefly to the training I received in my dear Alma Mater. The logical acumen of Chace, the inspiration from Lincoln, the rhetorical grace and fine criticism of Dunn, the historical generalizations of Gammell and the extraordinary knowledge of Sears all had a most influential part in forming my mind and shaping my subsequent life. I can never be grateful enough to them and their colleagues in the then Faculty, and I feel it is but a very small repayment on account of a large debt when I can do anything for Brown University.

That college men take precedence of others who have missed such invaluable training, is shown by the statistics sometime since quoted by the Medical Record. Of 912 physicians deemed worthy of notice in Appleton's American Cyclopedia of Biography, 473 are college trained men. The Record estimated that during the present century about 300,000 men have entered the medical profession. Of these therefore, nearly 1000, that is about one in 300 had gained more or less prominence. But on the basis of there being about 500 of these latter who were college men, the chances of distinction and influence for a college-bred man in medicine were increased from 1 in 300 to one in 60, or 5 times as great as if he had not had such intellectual training.

Never has there been a time when the demand for the best and ripest intellect in medicine was more pronounced than at present. The medical horizon is broadening most rapidly. The complexity of the problems constantly presented by disease and by the conditions of modern social life and the multiplicity of the means of investigating them; the logical methods necessary for the solution of these problems; the laboratory facilities which are required to that end; the relation of medicine to public health in matters of sanitation both to the individual and to the public, in peace and in

war, in city and in country, all attest the marvelous activity of the medical mind.

To any one about to enter upon such a life, the question will naturally occur, what are the requirements for such a professional career?

They may be stated, I think, under four headings: first, that a man shall have a strong body and an active mind; secondly, that he shall have the ability to acquire knowledge; thirdly, that he shall have the ability to use this knowledge, and fourthly, that he shall have the ability to impart this knowledge.

As to the first, it has been a great pleasure to me in the years since I graduated to see what enormous strides have been made in the development of vigorous bodies in our college men. Saving for a few who took to rowing and for some sporadic games of ball, which would now be laughed to scorn, there were no athletics in my day. A few men went to a gymnasium in the city, but the great bulk of students at that time, if they kept their health were fortunate. If they lost it, they were not blamed, though as we all now know, it was largely their own fault. But, I am thankful, that at the present day the most important class of the future citizens of the republic, from the intellectual point of view, are also bound to be the strongest and best from the physical point of view, and that the men who are going to influence our public affairs in the senate, at the bar, in the pulpit, in engineering, in commerce and at the bedside are to be men of a wholly different physique from those of thirty years ago. Moreover, the athletic field does far more for men than merely give them a strong body. It develops mental and moral characteristics of the highest order and the greatest importance in the later struggle for existence. But to the students of a college whose President has more than once declared himself convinced of the importance and value of athletics, both to scholarship and health, as President Andrews has done, it is not necessary for me further to enter upon this subject.

The strain of a medical life is very severe. The loss of sleep during many continuous hours of service (and the se-

verer and more responsible the case, the greater the likelihood of such long hours of endurance); the responsibility which attaches to him who holds a human life in his hand; the acute nervous strain of difficult surgical operations; the need of constant study and the necessity for the relinquishment of most of the recreations of life, all require that the physician should be above all a strong man both physically and mentally, or he will be in one respect or another unequal to the task set before him.

II. Let us turn, however, now to the more immediate professional requirements, for it may be well said, that strength of body and alertness of mind are prerequisites for every calling. In many years of teaching, I have seen large numbers of students and I have been struck with the great differences in their ability to acquire knowledge; not only that personal difference, which one may say is inherited in nearly all men, but in their mode of handling intellectual tools; in their ability to grasp and master ideas; in their quick comprehension of logical sequences; in their correlation of ideas, which is but another way of saying that there is a difference in seeing the bearing and value of any one fact, physical sign or medical symptom, which one man will possess in largest measure and another in least, if, indeed, he possesses it at all. This very difference in the ability of the trained mind to acquire more knowledge in less time than the untrained mind has led the Jefferson Medical College and several other of the leading colleges to admit students with a University degree, and who have pursued certain studies covering largely those of the first year in medicine as well as the last year in a college course, to advanced standing in the second year, thus requiring them only to devote three years to their technical training, instead of four years, or, including the college course, seven years instead of eight.

A man who goes through Brown, Princeton, Harvard, Yale, etc., is furnished with a knowledge of chemistry, biology, physiology, anatomy and other branches such that he has not only acquired a large part of the knowledge of the first year in the medical school, but above all, has learned how to learn.

In a given time he will acquire double the knowledge that the man fresh from the counter or the plough can obtain. More than this, there is developed by such a college training a subtle ability to distinguish that which is essential from that which is incidental or accidental, and so enables a college man to quickly get a broad, fundamental knowledge that the non-trained man can never get. This is not saying, of course, that there are no exceptions, but as we all know, exceptions by the very fact of their being such prove the rule.

Even in one single small thing, which, however, counts for more than would appear upon the surface, the very knowledge of Greek and Latin, from which the vast bulk of our medical terms are coined, facilitates the gaining of knowledge and more than that, gives a man an insight into the real meaning of terms, which the man who simply takes them *memoriter* knows nothing about. But, happily, academic studies are not limited now as formerly to the narrow range of Latin, Greek, mathematics, history, logic, rhetoric and their allies, but have widened their scope, and embrace very many of the scientific branches of the day. Whatever advantage may have been considered to arise from the study of Greek and Latin as means of training the mind and its logical powers, there is no question that science develops power of acute observation which no mere literary course can give; that upon these facts so observed is built a series of logical propositions as technical, as difficult, as acute as any that may be found in philosophy or literature. The men, therefore, who come from our colleges to the study of medicine have had to a very large extent their powers of observation and of logical deduction developed far more than the untrained minds of the ordinary country or even city young man. I know of no one who needs a training in strict logical methods more than the doctor.

Any one who follows carefully the experiments, reasoning and conclusions of Bernard in his physiological discoveries; of Pasteur in his brilliant researches on the diseases of the silkworm, or on fermentation on spontaneous generation, or on hydrophobia; or of Lister in his search, first for efficient

and then for better antiseptic methods, can reach no other conclusion than that logic can handle facts as well as ideas, and that mental training is both acquired and developed in the highest degree by such scientific researches. The problems of bacteriology, and recently the questions reaching even to the very constitution of matter and force involved in Roentgen's discovery of the X rays, demand the highest order of mental equipment.

It must be observed again that the advantages of academic training, while I am endeavoring to state them especially from the view of the prospective medical student, endure far beyond that period of life. He who has studied the humanities under inspiring teachers has had developed in his mind a love of letters and appreciation of the highest and best and noblest in literature, ancient and modern, in English, in foreign tongues, in prose or in verse, which will be a never-ending well-spring of joy to him. If he becomes a successful and busy practitioner in any branch of medicine, he will have far too little time to give to those studies which polish the mind and adorn the character. But it will be to him a joy that he has had at least a taste, which has but whetted his appetite for more, and will lead him to steal many a delightful hour, even from sleep, for such enjoyment. He will be none the worse a doctor if he can read an ode of Horace, or a page of Homer, nor will he handle the scalpel any less deftly if he knows Shakespeare by heart or owns a well-thumbed Goethe.

III. Having acquired a certain amount of learning as to the fundamentals of medicine, the doctor starts out on his career. However great or small be his scientific acquirements, they must all be turned to the final cause of his being a doctor: namely, to the cure of his patients. How does a doctor approach this problem, which awaits his solution with every patient whom he sees? There are four stages. First, the facts as to the history of his patient. This history is both personal and family. He not only wants to know how this present illness or tumor began, and the symptoms which have attended its development, but what was its cause—a cause

which may be hidden in the present habits, earlier surroundings or former diseases of his patients. More than this, so strong is the influence of one generation upon another, that a large number of diseases are dependent upon tendencies inherited from ancestors ; not from only one, but it may be even more than one, prior generation. And it is strange how very inaccurate large numbers, even of intelligent persons, are ; their remembrances of facts so uncertain ; their observation of physical conditions so vague and indefinite. It often requires all the skill in cross-examination that would be required of an acute attorney to get at the real facts of the case. When these are set in order, then comes, secondly, the physical examination. Here nature is often treacherous and juggles with us, even on the edge of the grave. Touch, sight and hearing must all be called into co-ordinate energy, and all be guided by a clear, logical mind, or again we shall not get the right facts as to the physical condition of the patient. The physical signs being ascertained, what are the deductions to be drawn from them ? Here comes constantly the value of academic training. Many a fact, which seems at first glance to be important, simply because it is upon the surface and is first observed, is pushed aside at once by the logical mind of the college trained man. He has learned by long experience how to see through the superficial to the deep, through the accidental to the essential ; or, it may be, often through the mimicry of disease to the true disorder. Having, therefore, deduced certain logical conclusions as to the malady, or injury or surgical condition, he is finally prompt in the selection of the remedy, whether it be drug or diet or the knife, and his decision of character impresses his patients with a confidence in his skill, which a friendly and kindly demeanor enhances. This assures him success in his profession.

IV. No man in any calling of life can live alone ; nor can the doctor. Even with his very first patient he must use tact as well as skill clearly to set forth the nature of the trouble, and the need for the regimen or operation he advises, or to satisfy a timid patient with such thoughtful and guarded statement of the truth as will

not needlessly alarm, and yet will invite and insure obedience. To state this accurately, truthfully and convincingly, and yet not too bluntly, is one of the largest elements in the character of a successful practitioner. But not only is this required in relation to his individual patients. He must impart his knowledge to the profession; and the place that a man takes among his fellows, both of his own calling and in the entire community, depends not a little on his ability to set forth his ideas clearly, logically, forcibly. The training of tongue and pen that a man gets in Brown University is simply invaluable in training him to formulate such statements of truth. The man who in medical societies shows that he is familiar with the literature of the subject, that he knows what is going on, that he is progressive and keeps up with the times, and then can state his views in a convincing way, becomes a man of power; a man whose judgment is sought for, whose advice is asked by his brother practitioners. And it does not take long for the public to find out what doctor is most trusted by other doctors. He is the man they want for themselves.

Such papers find their way usually into our medical journals, which stand in the same relation to the more elaborate and systematic, but less fresh books which are issued from the medical press than the newspapers do to serious works of history. A man's reputation is built up largely on the papers which he writes and presents at such societies and are published in the medical journals; and all that I have said above applies to such published papers, and still further, of course, to formal statements of knowledge in books. The wretched, slovenly style that one often sees both in journal articles and books is not surprising when we consider how relatively few men there are who cultivate the rhetorical graces of style. As Dr. Billings some time ago pointed out, even the very title of a paper is often badly chosen. If I am searching, for instance, for all the published cases of gunshot wound of the kidney for the purpose of analyzing them and determining the value both of the symptoms and the physical signs and of the methods of treatment, in

going over the *Index Medicus* to collect the recorded cases and I likely to look at a paper which may relate a most interesting and important case of gunshot wound of the kidney, which hides the case under the vague title of "Two Interesting Surgical Operations?" The title of a paper or of a book is like the name of a man. It should be distinctive, so that one may always refer to it and know precisely what it is about.

But not a few doctors become prominent teachers. The number of men who teach in any one of our medical schools is relatively small, yet the aggregate number of teachers in the profession is very large. While the art of teaching is, to some extent, innate, no man will make a thoroughly good and successful teacher unless he has had more or less of such a college training. The ability to set forth his ideas in logical order, in natural sequence, passing from the known to the unknown, from facts to deductions, and with at least a reasonable degree of rhetorical grace is a gift which is susceptible of the greatest possible development by training. Even great geniuses who have lacked such training, such as John Hunter, have always been hampered to their very graves by their inability to express themselves in graceful and yet forceful, clear English.

I might go further, did time permit, but I will only allude to one final advantage, as it seems to me, of a college training, and that is on the moral and spiritual side. Whatever may be a man's relation to any individual religious belief, it is scarcely possible for him to go through the four years of a college course without rising to a higher moral plane, without having developed within him the spiritual side of his nature by his contact with earnest men of various faiths. I would trust a college man more quickly than I would any other man morally and spiritually, as well as intellectually, for I believe, though there are vices and evil influences in every college, yet on the whole, the influence of a college life makes for righteousness as well as for knowledge. When we reflect that the physician's influence begins, even before birth and only ends with the grave itself; when we consider his intimate and personal sacred relations with all the

members of a family ; that he is the repository of facts which he must no more disclose than the listening walls of his consulting room ; when we consider the confidence that is bestowed upon him, how intimately his advice affects the whole-future, not only physical, but intellectual and moral, of so many of his patients, surely there is need for such a man to live, not only on the highest intellectual level, but on the highest moral plane. If he does not, he is unworthy of the noble profession which he ought to adorn.
